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The Future Internet: A European Solution

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My point

Europe is technically capable
Europe has a good track record of innovation
Europe can motivate the necessary finance
Europe has established markets
European industry can see the opportunities

…So why are we not moving faster ?

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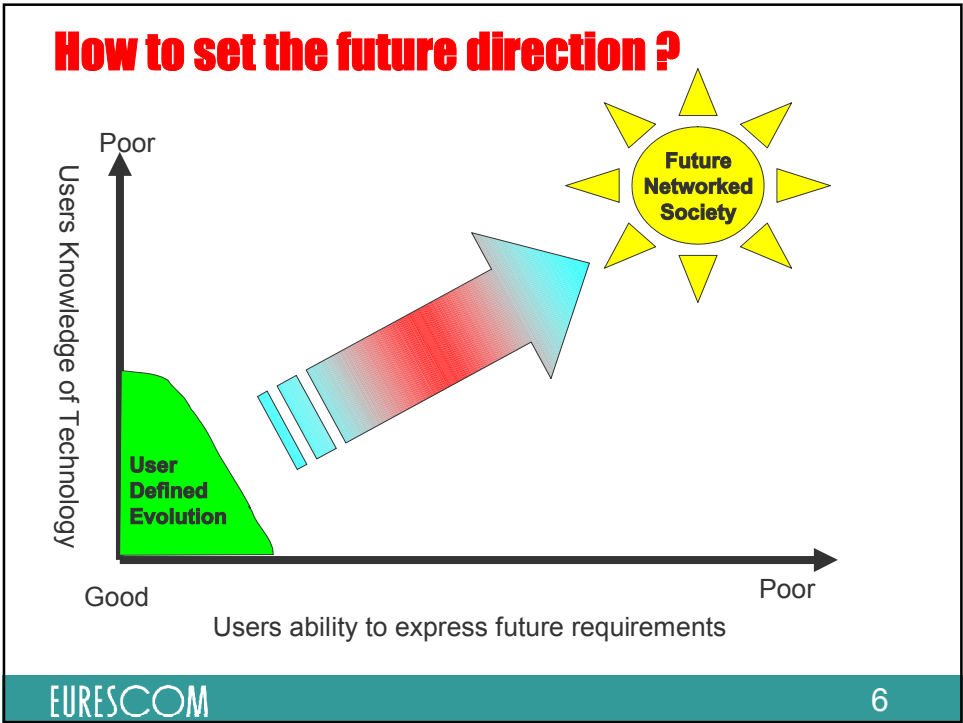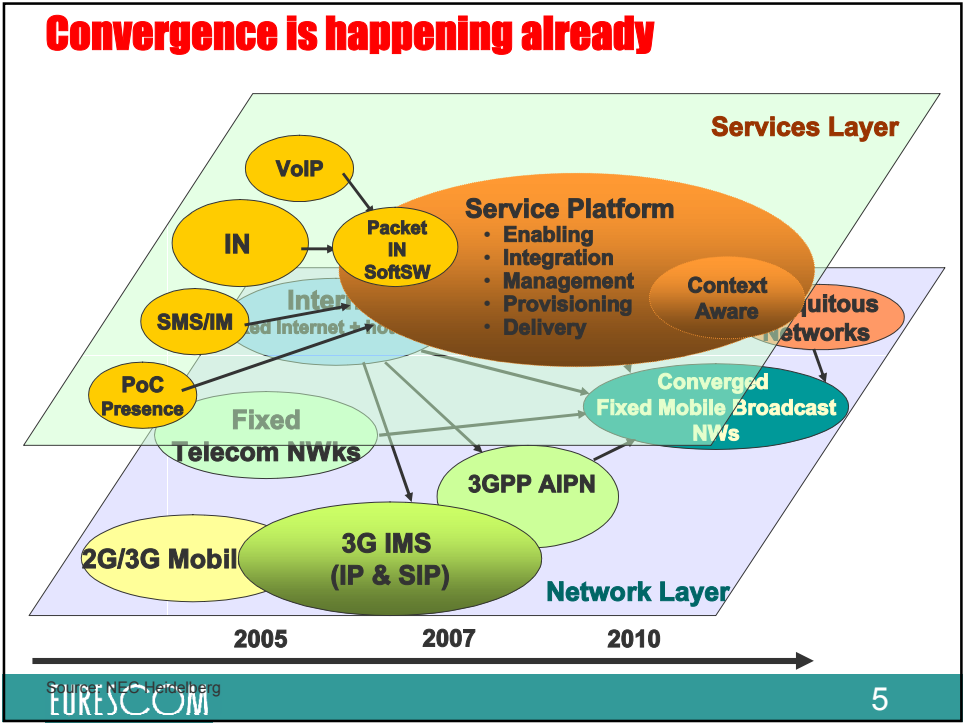
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The Future ...... Internet or whatever

Users

Advanced
Access, Core
and Delivery
Networks

Digital Content

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Convergence is happening already

Source: NEC Heidelberg

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How to set the future direction ?

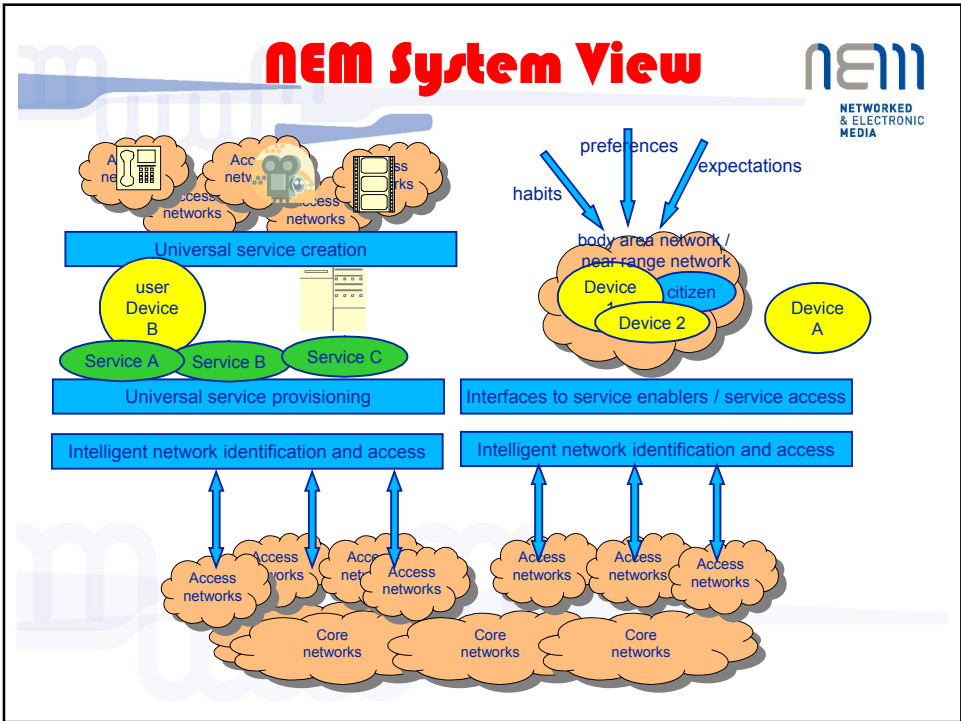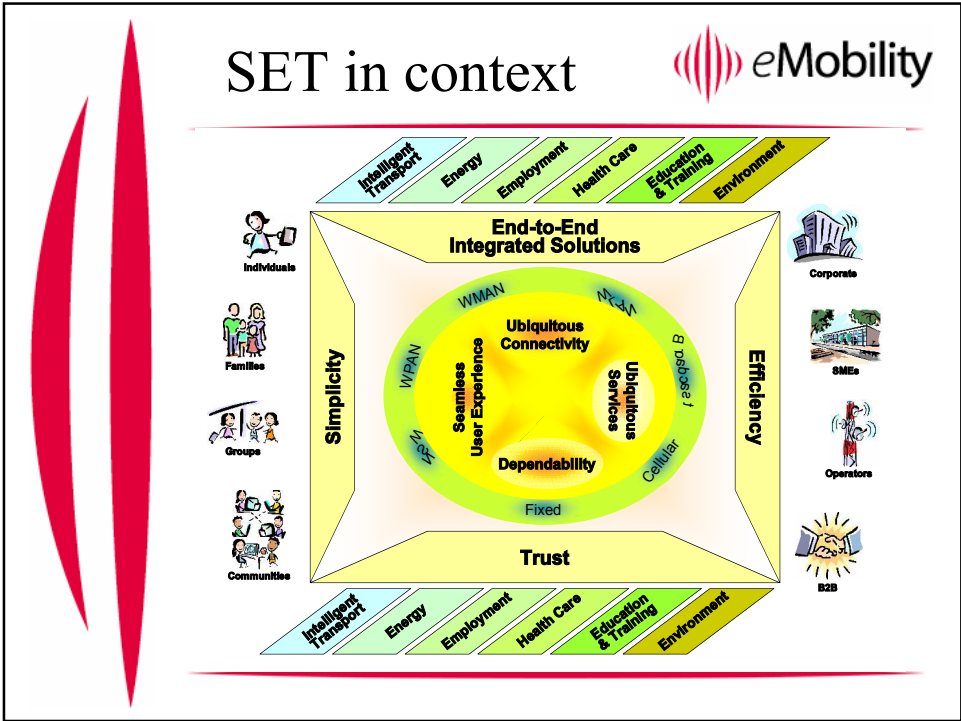EURESCOM 6

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What to do

We have the ETPs
- eMobility
- NEM
- Nessi
- ISI

We have EIFFEL

We have a number of projects in the Future Networks area of FP7

We have CELTIC projects

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Vision Basis: New User Requirements — eMobility

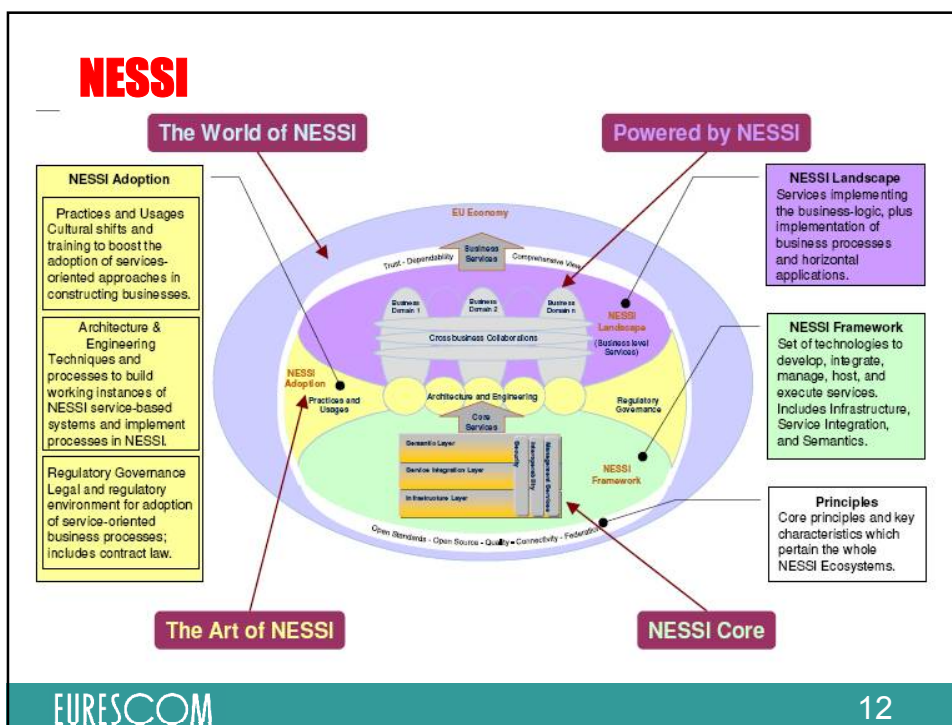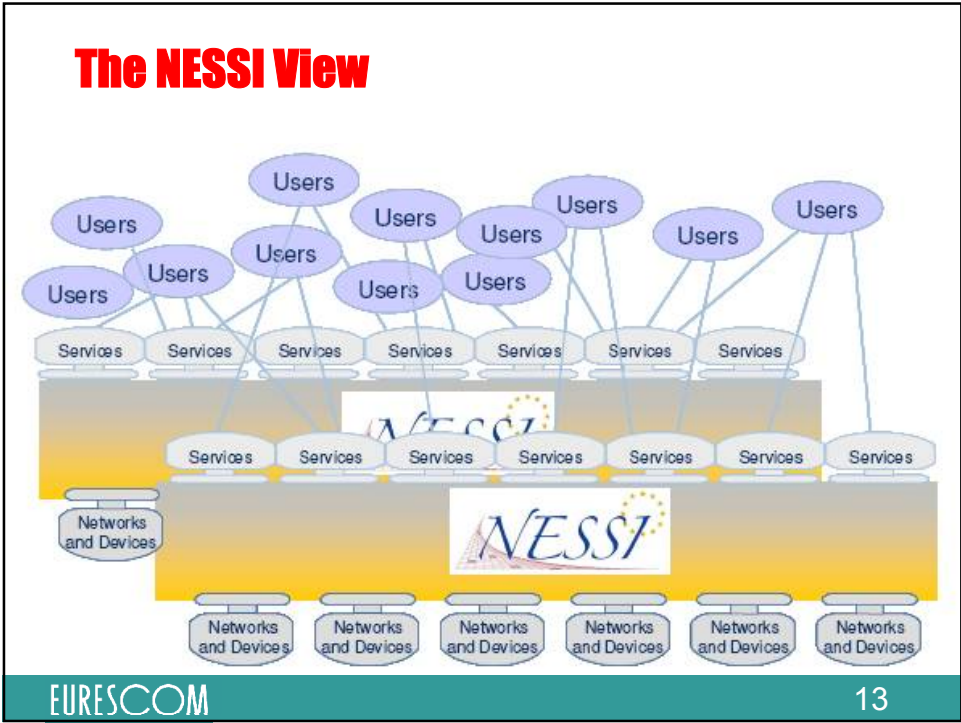# EURESCOM

Key NEM Challenges

- Interoperable **N**etworking Infrastructure to enable "Multimedia Networking"
- **E**mpower end-users (put the user first)
- "**E**lectronic Content From All To All" approach
- Convergence of various **M**edia and Content formats
- New **M**iddleware for Media applications

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The NESSI View

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The ISI View

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The EIFFEL Initiative

A European Discussion and a Step Towards
a **Future Internet Forum**

Needed: A Phased Approach for Developing Research Agendas following a Balanced Approach

- Recognize importance of evolutionary & explorative path (**balance**)
- Vision trajectories developed for both paths (**research agendas**)
- Development of agendas over time (**phased approach**)

- **-> Interaction & debate needed to make agendas and visions meet in common challenge**

THE FUTURE NETWORKED SOCIETY   16   **© EIFFEL Think Tank 2007**

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The technical fashions are changing

- ▸ The big Dumb Network concept is dying
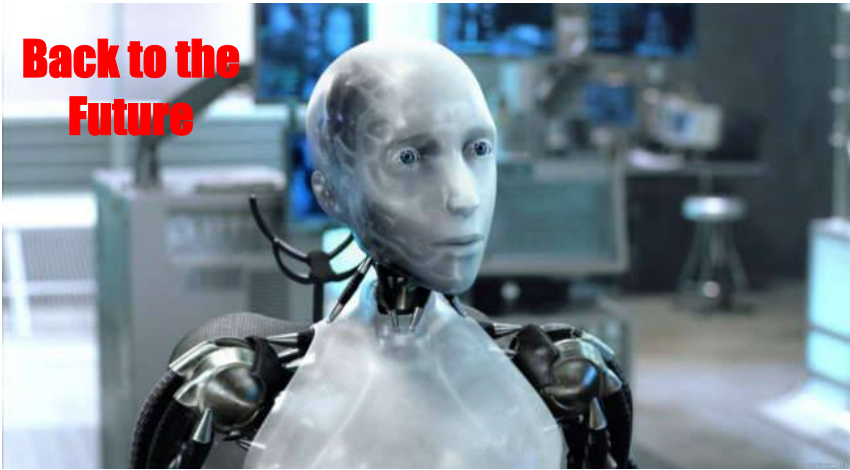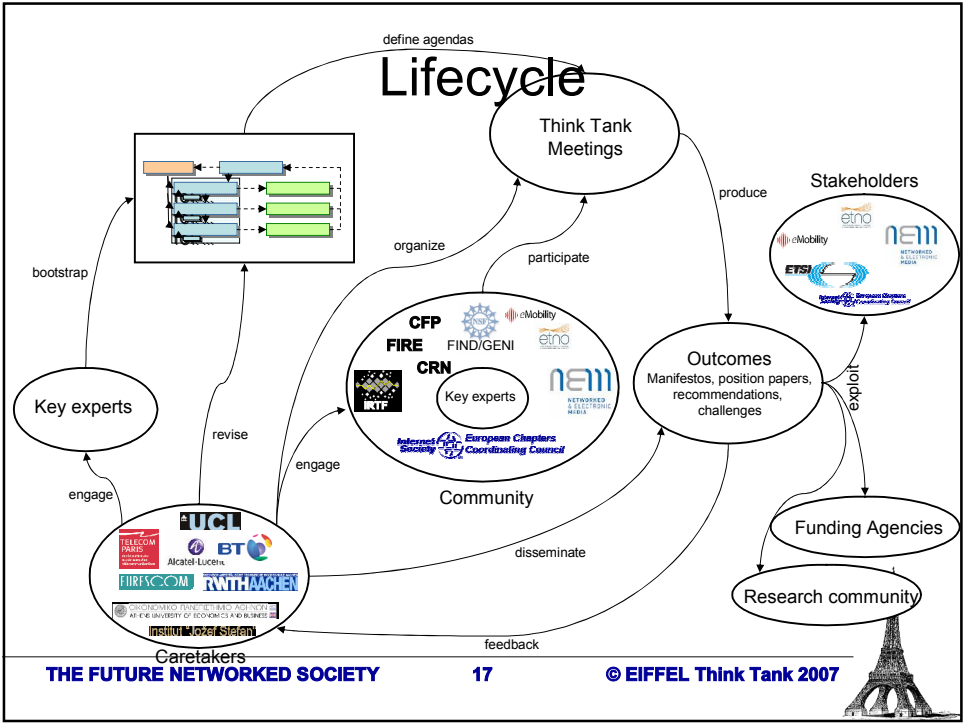- ▸ The layered model is up for debate again
- ▸ The protocols need to be improved
- ▸ We need convergence, integration, interoperability to make things seamless !!
- ▸ Managed networks will be needed to provide the complex services reliably
- ▸ Intelligence in the network is necessary but how much and where?
- ▸ Next Generation Users are going to have much higher expectations

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Remember the user view

Compatibility and Interoperability: a key requirement from consumers

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Seamless Service Provisioning

- Develop an integrated service platform for all networks (including personal)
- Develop handover and roaming mechanisms to seamlessly operate services
- Service middleware for highly distributed networked environments
- Flexible selection of access tech. wrt. application requirements
- New User Profiles to enable personal services,
- Protection of user's privacy and identity,
- Dynamic composition of services depending on context, proximity, time.
- Data management as never before envisaged

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Network Planning & Optimisation

- New dimensioning solutions for the new network architectures
- Traffic planning tools for a completely new service and data paradigm
- Key network parameters for performance control
- Specialised network planning and optimisation tools for home networks, including body area and personal area networks.
- New solutions for optimization of antennas so the overall performance is maximized
- To identify the new equivalents for network mgt. aspects like routing, numbering, signalling, charging, etc.,

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Ubiquitous Multimedia Networking

- ‣ Numerous individual solutions severely increases system complexity.
- ‣ Optimisation across layers ranging from the network to pervasive services
- ‣ New solutions for privacy and security.
- ‣ Enabling components: e.g. service discovery, service composition, user context mgt.,
- ‣ Service provisioning in a virtual personal environment of home-body-car networks
- ‣ Ambient Service Frameworks
- ‣ Integrated tool suites for easy and cost efficient service development & deployment
- ‣ Virtual, augmented and mixed reality environments.

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The New Business Models

- ‣ The current mix of fixed, mobile, internet TV broadcast cannot exist as independent business models after 2010.
- ‣ Delivery will become independent of content or format and possibly time
- ‣ Terminal capability, network access will dictate format
- ‣ Pricing models need to dramatically change
- ‣ Example: I pay for watching football.
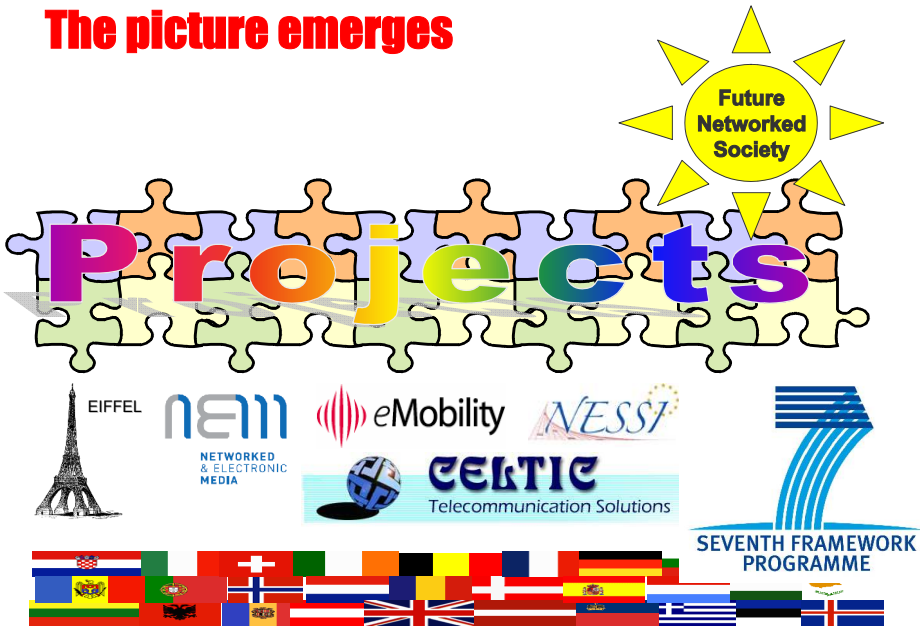 - ▪ Should I pay more to watch it at home, in friends house, on my mobile, via satellite, via internet…?

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My alternate view of the future

- Voice telephony will be subscription only
- Connectivity will be a basic human right
- Usage will be paid
- All content will be "free" i.e. paid for by a monthly fee

Germany:

90 Million People

50% pay for services i.e. 45 Million

10 Euros per month

5,400,000,000 € per year to pay for content

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The picture emerges

Future Networked Society

Projects

EIFFEL   nem NETWORKED & ELECTRONIC MEDIA   ((()) eMobility   NESSI   CELTIC Telecommunication Solutions   7 SEVENTH FRAMEWORK PROGRAMME

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Capturing the progress – standards?

Open discussion on where standards are needed (and not needed!!!) - Liaise with ETPs.

Annual roadmap on standards – plan for new requirements and the retirement of old standards.

Limit the players in each standard discussion

Question the degree of formality/detail needed in each standard (**just enough and publish**)

Challenge the disconnect between project results and standards submissions

Allow input of reference material direct from projects

Reduce the time required to develop standards.

Reduce the IPR/license content of standards

Publish more pre-release information – allow development to start early with low risk

Promote the implementation of the standards

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Money makes the world go round: Europe is investing in the Future Internet

FP7 1.1 Networks of the future	**200 MEur**
FP7 1.6 FIRE (Oct.9th)	**40 MEur**
FP7 1.5 Networked Multimedia	**85 MEur**
FP7 Programme (Calls 1~3)	2 BEur
CELTIC Programme	1 BEur
National Research Programs	??? BEur
NEM	3~4 BEur
eMobility	3~4 BEur

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Conclusion

Now is the time to act:

- We have the organisational structures
- We have the technology projects & ETPs
- We have the business case(s)

European Consolidation

- We need standardisation structures
- We need to be more confident
- We need to act coherently

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Europe:
Where the real Future Internet
Begins !!!

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References

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- EIFFEL http://www.eiffel-thinktank.eu/
- *eMobility* www.emobility.eu.org
- FP7 http://cordis.europa.eu/fp7/home_en.html
- ISI www.isi-initiative.eu.org
- NEM www.nem-initiative.org
- NESSI www.nessi-europe.com

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